CLAIMS

1. An imaging lens system for forming an optical image of an object on a light receiving surface of a solid-state image sensor, comprising, in order from an object side:

an aperture diaphragm; and

three lens elements which are

a first lens element having a positive optical power and a convex surface on an image side,

a second lens element having a negative optical power and being a meniscus lens whose object side has a concave shape, and

a third lens element having a positive optical power and being a meniscus lens whose object side has a convex shape, wherein

following conditional expressions are satisfied:

$$1.5 < |fd/f2d| < 2.3 \quad (1)$$

$$0.5 < |fd/f3d| < 1.1 \quad (2)$$

$$-2.2 < (r_{21}+r_{22})/(r_{21}-r_{22}) < -1.3 \quad (3)$$

$$2.1 < (r_{31}+r_{32})/(r_{31}-r_{32}) < -1.7 \quad (4)$$

wherein,

fd is a composite focal length of an entire imaging lens system to d-line (mm),

f2d is a focal length of the second lens element to the d-line (mm),

f3d is a focal length of the third lens element to the d-line (mm),

r_{21} is a radius of curvature of an object side surface of the second lens element (mm),

r_{22} is a radius of curvature of an image side surface of the second lens element (mm),

r_{31} is a radius of curvature of an object side surface of the third lens element (mm), and

r_{32} is a radius of curvature of an image side surface of the third lens element (mm).

2. The imaging lens system according to claim 1, wherein at least one of the first lens element, the second lens element and the third lens element has aspherical surfaces on both faces.

3. The imaging lens system according to claim 1, wherein following conditional expressions are satisfied:

$$60 < 2 \cdot \omega d < 70 \qquad (5)$$

$$1.2 < T/fd < 1.7 \qquad (6)$$

wherein,

ωd is a half view angle of the entire imaging lens system to the d-line (unit: in degrees), and

T is an entire length between an object side surface of the first lens element and the image side surface of the third lens element (mm).

4. The imaging lens system according to claim 1, wherein

following conditional expressions are satisfied:

$$1.4 < |fd/f1d| < 2.0 \quad (7)$$

$$0.3 < (r_{11}+r_{12})/(r_{11}-r_{12}) < 0.7 \quad (8)$$

wherein,

f1d is a focal length of the first lens element to the d-line (mm),

r_{11} is a radius of curvature of the object side surface of the first lens element (mm), and

r_{12} is a radius of curvature of an image side surface of the first lens element (mm).

5. The imaging lens system according to claim 1, wherein the second lens element and the third lens element have, in effective diameters, at least one point taking a value of zero for a first-order differential as to H, H being a coordinate along a direction perpendicular to an optical axis in a following expression indicating an aspherical surface shape,

$$Z = \frac{(1/CR)\cdot H^2}{1+\sqrt{1-(1+K)\cdot(1/CR)^2\cdot H^2}} + \sum_{n=4}^{16} An\cdot H^n$$

wherein,

in a cylindrical coordinate system including a Z axis referring to an axis extending toward an image plane side along an optical axis direction, and an H axis referring to an axis vertically extending along a direction away from the optical axis,

CR is a paraxial radius of curvature (mm),

K is a conic coefficient, and

An is an n-th order aspherical coefficient.

6. The imaging lens system according to claim 1, wherein the second lens element and the third lens element are formed from a synthetic resin material, and satisfy following conditional expressions (9) and (10):

$$25 < V2d < 35 \quad (9)$$

$$50 < V3d < 60 \quad (10)$$

wherein,

V2d is an Abbe number of the second lens element, and

V3d is an Abbe number of the third lens element.

7. The imaging lens system according to claim 1, wherein the first lens element satisfies a following conditional expression (11):

$$50 < V1d < 65 \quad (11)$$

wherein,

V1d is an Abbe number of the first lens element.

8. An imaging unit operable to convert an optical image of an object to an electrical image signal for output, comprising:

an imaging lens system for forming the optical image of the object; and

a solid-state image sensor for receiving the image formed

by the imaging lens system, and converting the image to the electrical image signal, wherein

the imaging lens system is an imaging lens system according to any of claims 1 to 7.

9. The imaging unit according to claim 8, wherein an optical low-pass filter is provided on an object side with respect to the solid-state image sensor.

10. An optical device used for taking an optical image of an object as an electrical image signal, comprising:

an imaging unit operable to convert the optical image of the object to the electrical image signal for output; and

a body for accommodating the imaging unit, wherein

the imaging unit comprises:

an imaging lens system for forming the optical image of the object; and

a solid-state image sensor for receiving the image formed by the imaging lens system, and converting the image to the electrical image signal, wherein

the imaging lens system is an imaging lens system according to any of claims 1 to 6.